

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-2, 4-9, 12-20, 23-30, and 33-40 are currently pending, Claims 1-2, 4-9, 12-20, 23-30, and 33-40 having been amended, and Claims 3, 10-11, 21-22, 31-32, and 41-42 having been canceled without prejudice or disclaimer. The changes and additions to the claims do not add new matter and are supported by the originally filed specification, for example, by original Claims 4 and 15.

In the outstanding Office Action, Claims 1, 6, 9, 11, 16, 19, 27, 30, and 36 were objected to for informalities; Claims 5, 8, 15, and 18 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement; Claims 5, 8, 15, and 18 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite; Claims 1-4, 7, 10-14, 17, 20-25, 28, 31-34, 37, and 40-42 were rejected under 35 U.S.C. §103(a) as being unpatentable over Sugar et al. (U.S. 7,194,237, hereafter “Sugar”) in view of Pautler et al. (U.S. Pub. No. 2003/0185309, hereafter “Pautler”) and Onggosanusi et al. (U.S. Pub. No. 2004/0076224, hereafter “Onggosanusi”); and Claims 6, 9, 11, 16, 19, 26-28, 29-30, 35, and 38-39 were objected to as being dependent upon a rejected base claim, but containing allowable subject matter.

Applicants thank the Examiner for the indication of allowable subject matter. However, the claims objected to are presently maintained in dependent form because Applicants believe that the independent claims include allowable subject matter.

With respect to the objection to Claims 1, 6, 9, 11, 16, 19, 27, 30, and 36 for informalities, Applicants respectfully submit that the amendments to these claims overcomes this ground of objection.

With respect to the rejection of Claims 5, 8, 15, and 18 under 35 U.S.C. §112, first paragraph and second paragraph, Applicants respectfully traverse this ground of rejection.

For example, Claim 5 recites, *inter alia*,

a weight selector for estimating a transmission quality according to the first reception weights, second reception weights, processed feedback information, information of channel state and condition of received power from the received power estimation unit, and selecting the proper reception weights.

The Office Action takes the position that Claim 5's recitation of "a weight selector for estimating a transmission quality..." is inconsistent with the disclosure of the invention. (See Office Action, at page 3). However, Applicants respectfully submit that the above-mentioned features of Claim 5 are consistent with the specification on, for example, page 31, lines 24 to page 32, line 3; and page 33, lines 17-27. Therefore, Applicants respectfully request that this ground of rejection be withdrawn.

Additionally, MPEP §2164.04 includes the following statement,

"it is incumbent upon the Patent Office, whenever a rejection on this [enablement] basis is made, to explain why it doubts the truth or accuracy of any statement in a supporting disclosure and to back up assertions of its own with acceptable evidence or reasoning which is inconsistent with the contested statement. Otherwise, there would be no need for the applicant to go to the trouble and expense of supporting his presumptively accurate disclosure." (Emphasis Added). In re Marzocchi, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

Therefore, if the examiner maintains this ground of rejection in a subsequent Office Action, Applicants request that the examiner articulate why the specification is inconsistent with the claims.

With respect to the rejection of Claim 1 under 35 U.S.C. §103(a), Applicants respectfully submit that the amendment to Claim 1 overcomes this ground of rejection.

Amended Claim 1 recites, *inter alia*,

said receiver comprising:

a channel state estimating means for estimating a state of each communication channel from received signals received by the L antennas to output information of channel estimation, and including a channel information accumulation unit configured to accumulate the information of channel estimation as information of channel state for a predetermined interval;

Sugar is directed to a system and method for multiple-input multiple-output (MIMO) radio communication. Fig. 1 of Sugar describes a system 10 that includes a first radio communication device 100 having N antennas which communicates with a second radio communication system 200 having M antennas. Sugar describes that device 100 has knowledge of a channel state between the two devices, which is characterized by a channel response matrix H. The device 100 uses a feedback technique to send this knowledge to the device 200. Fig. 5 of Sugar shows a receiver section 120B which includes a channel estimator 455 for providing channel estimation computations.

The Office Action takes the position that Sugar's description of the channel estimator 455 corresponds to the claimed "channel state estimating means" recited in Claim 1 (see Office Action, at page 4).

However, Sugar fails to disclose or suggest that the channel estimator 455 includes "a channel information accumulation unit configured to accumulate the information of channel estimation as information of channel state for a predetermined interval," as defined by amended Claim 1.

Applicants note that original dependent Claim 4 recited "a channel accumulation unit configured to accumulate the information of channel estimation as the information of a channel state for a predetermined interval," as now recited in amended Claim 1. The Office Action did not cite to a specific element or portion of Sugar, Paulter, or Onggosanusi as corresponding to the above-mentioned feature. However, the Office Action took the position

that “one of ordinary skill in the art would recognize that it is well known in the art to accumulate the channel information for further processing. Therefore, it would have been obvious to one of ordinary skill in the art to accumulate the channel information for a predetermined interval for further processing.” (See Office Action, at pages 9-10).

Applicants respectfully submit that it is not obvious to have a channel estimating means that includes “a channel information accumulation unit configured to accumulate the information of channel estimation as information of channel state for a predetermined interval,” as defined by Claim 1. The Office Action has not provided any basis for making this assertion. Additionally, while the Office Action has not clearly indicated that it took Official Notice on this matter, the MPEP §2144.03 states the following:

“Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be “capable of such instant and unquestionable demonstration as to defy dispute” (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)).”

“It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. **For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art.**” (Emphasis Added).

Applicants submit that “a channel information accumulation unit configured to accumulate the information of channel estimation as information of channel state for a predetermined interval” is an example of a technical fact in the area of esoteric technology or

specific knowledge of the prior art that must always be supported by citation to some reference work recognized as standard in the pertinent art, as provided in the MPEP.

Therefore, Applicant respectfully submits that the rejection to original Claim 4, as applicable to amended Claim 1, is improper and must be withdrawn, or the examiner must submit documentary evidence in a subsequent Office Action to support the assertion that the above-mentioned features are well-known in the art.

Thus, Applicant respectfully submit that amended Claim 1 patentably distinguishes over Sugar, Paulter, and Onggosanusi, either alone or in proper combination.

Independent Claims 2 and 23 recite features similar to those of amended Claim 1 discussed above. Thus, Applicants respectfully submit that amended Claims 2 and 23 (and all associated dependent claims) patentably distinguish over Sugar, Paulter, and Onggosanusi, either alone or in proper combination.

With respect to the rejection of Claim 12 under 35 U.S.C. §103(a), Applicants respectfully submit that the amendment to Claim 12 overcomes this ground of rejection. Amended Claim 12 recites, *inter alia*,

a feedback-delay compensating means for
compensating a feedback-delay for the feedback
information from the feedback-delay processing means,
and including a channel information accumulation unit for
accumulating the primitive feedback information from the
channel state estimation unit.

Original Claims 14 and 15 recited a channel information accumulation unit as now recited in amended Claim 12. However, the Office Action did not cite to any specific element or portion of Sugar, Paulter, or Onggosanusi as corresponding to the above-mentioned feature. Further, Applicants submit that Sugar, Paulter, and Onggosanusi fail to disclose or suggest “a feedback-delay compensating means for compensating a feedback-delay for the feedback information from the feedback-delay processing means, and including

a channel information accumulation unit for accumulating the primitive feedback information from the channel state estimation unit,” as defined by amended Claim 12.



Thus, Applicants respectfully submit that amended Claim 12 patentably distinguishes over Sugar, Paulter, and Onggosanusi, either alone or in proper combination.

Independent Claims 13 and 33 recite features similar to those of amended Claim 12 discussed above. Thus, Applicants respectfully submit that amended Claims 13 and 33 (and all associated dependent claims) patentably distinguish over Sugar, Paulter, and Onggosanusi, either alone or in proper combination.

Consequently, in light of the above discussion and in view of the present amendment, the outstanding grounds for rejection are believed to have been overcome. The present application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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